

April 10, 1959

Professor J. B. S. Haldane
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Dear Haldane:

Thank you for your messages of March 7, and April 1. I've managed to retrieve my copy of New Biology No. 16 and there can scarcely be any doubt that some residues from my reading it some years ago had lingered on in provoking my more recent discussions. I am sorry not to have had this more immediately in mind in my earlier writing.

Apart from the question of parity there is rather explicit evidence of cosmic asymmetry in the polarization of light from distant stars. This may well be expected to have some influence on the symmetry of elementary condensation reactions and may therefore, not be an altogether remote factor in primal biological asymmetry.

Reproductive processes in interstellar matter are going to have to be taken very seriously as part of any picture of the condensation of the gas and dust. As Bates and Spitzer point out, the rate of condensation of free atoms is very low and most effective accretion must take place on already formed surfaces. That is to say, the growing grains may have to split in order to account for the aggregation of condensed matter. There was a good deal of recent astrophysical work that I was unable to acknowledge in detail in that brief review.

I have been trying to think, during the last year or two, of artificially designed systems of molecular replication somewhat less complex than DNA. There are some polymerization schemes that may be reasonably plausible on paper and in models but they will have to be tried out in the chemical laboratory. I myself feel that there is a plausible case for a probable evolution, by gradual stages, of the faculty of precise self-replication itself, the earliest systems having only the least effective technique of replication.

I think we may have succeeded in establishing a reasonably circumspect position on planetary contamination in this country but the Russian attitude is as enigmatic as ever. I think certainly the best course is to keep as far away from politics and organized action as possible, and instead to use the customary means of scientific communication as far as possible. I am exploring the possibility of writing a brief article for publication in a Russian Journal but don't know when I will have the time for it. I had seen your name on a tentative program for a Ciba Conference in Naples and am sorry to have to conclude that that did not work out.

Yours sincerely,

Joshua Lederberg
Professor of Genetics